WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device comprising:

forming an insulating film on a semiconductor substrate, forming a concave in said insulating film and then forming a metal film filling said concave;

conducting a first polishing over a whole surface of said substrate to form a metal area filled in said concave; and

conducting a second polishing over said whole surface of said substrate to remove parts of said metal area and of said insulating film;

wherein said second polishing also removes a part of a normal taper formed in an upper part of said concave.

2. A method of manufacturing a semiconductor device comprising:

forming a first interconnection of a metal film on a semiconductor substrate;

forming an insulating film such that it covers said first interconnection;

selectively removing said insulating film to form a via hole reaching an upper surface of said first interconnection and an interconnection trench connected to said via hole;

forming a metal film filling said via hole and said interconnection trench;

conducting a first polishing over a whole surface of said substrate to form a second interconnection filled in said via hole and said interconnection trench as well as a connection plug; and

conducting a second polishing over said whole surface of said substrate to remove parts of said second interconnection and of said insulating film;

wherein said second polishing also removes at least a part of a normal taper formed in an upper part of said interconnection trench.

3. A method of manufacturing a semiconductor device comprising:

forming an insulating film on a semiconductor substrate;

forming a sacrificial film on said insulating film;

selectively removing said sacrificial film and said insulating film to form a concave in said insulating film and then forming a metal film filling said concave;

conducting a first polishing over a whole surface of said substrate to form a metal area filled in said concave; and

conducting a second polishing over said whole surface of said substrate to remove parts of said metal area and of said insulating film;

wherein said second polishing also remove said sacrificial film.

4. The method as set forth in Claim 3, wherein said step of forming said concave in said insulating film comprises conducting etching under an etching conditions in which said sacrificial film is more slowly etched than said insulating film.

5. A method of manufacturing a semiconductor device comprising:

forming a first interconnection of a metal film on a semiconductor substrate;

forming an insulating film such that it covers said first interconnection;

forming a sacrificial film on said insulating film;

selectively removing said insulating film and said sacrificial film to form a via hole reaching an upper surface of said first interconnection and an interconnection trench connected to said via hole;

forming a metal film filling said via hole and said interconnection trench;

conducting a first polishing over a surface of said substrate to form a second interconnection and a connection plug filled in said via hole and said interconnection trench; and

conducting a second polishing over said whole surface of said substrate to remove parts of said second interconnection and of said insulating film;

wherein said second polishing also remove said

sacrificial film on said insulating film.

6. The method as set forth in Claim 5, wherein said step of forming said via hole and said interconnection trench in said insulating film comprises conducting etching under an etching conditions in which said sacrificial film is more slowly etched than said insulating film.

7. The method as set forth in Claim 1, wherein an information on a polishing rate in said second polishing is obtained and on a basis of said information, an end point of said second polishing is determined.

8. The method as set forth in Claim 2, wherein an information on a polishing rate in said second polishing is obtained and on a basis of said information, an end point of said second polishing is determined.

9. The method as set forth in Claim 3, wherein an information on a polishing rate in said second polishing is obtained and on a basis of said information, an end point of said second polishing is determined.

10. The method as set forth in Claim 4, wherein an information on a polishing rate in said second polishing is obtained and on a basis of said information, an end point of said second polishing is determined.

11. The method as set forth in Claim 5, wherein an information on a polishing rate in said second polishing is obtained and on a basis of said information, an end point of said second polishing is determined.

12. The method as set forth in Claim 6, wherein an information on a polishing rate in said second polishing is obtained and on a basis of said information, an end point of said second polishing is determined.

13. The method as set forth in Claim 1, wherein a thickness of said insulating film polished along with said metal area is observed to determine an end point of said second polishing.

14. The method as set forth in Claim 2, wherein a thickness of said insulating film polished along with said second interconnection is observed to determine an end point of said second polishing.

15. The method as set forth in Claim 3, wherein a thickness of said insulating film polished along with said metal area is observed to determine an end point of said second polishing.

16. The method as set forth in Claim 4, wherein a thickness of said insulating film polished along with said metal area is observed to determine an end point of said second polishing.

17. The method as set forth in Claim 5, wherein a thickness of said insulating film polished along with said second interconnection is observed to determine an end point of said second polishing.

18. The method as set forth in Claim 6, wherein a thickness of said insulating film polished along with said second

interconnection is observed to determine an end point of said second polishing.